This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (canceled)

1   Claim 2 (currently amended): The method of claim 15 1 wherein the customer context
2   information added to the resulting data is added in the place of the at least a part of the
3   layer 2 address information removed.

Claim 3 (canceled)

1   Claim 4 (currently amended): The method of claim 15 1 further comprising:
2   jf)   saving, in association with the logical interface, layer 2 source address
3   information of the data.

1   Claim 5 (currently amended): The method of claim 15 1 wherein at least a portion of the
2   customer context information identifies a unique virtual private network customer.

1   Claim 6 (original): The method of claim 5 wherein at least a portion of the customer
2   context information identifies a unique host of the unique virtual private network.

1   Claim 7 (original): The method of claim 5 wherein at least a portion of the customer
2   context information uniquely identifies the logical interface within a given virtual private
3   network customer.

1   Claim 8 (currently amended): The method of claim 15 1 wherein at least a portion of the
2   customer context information uniquely identifies the logical interface.

1   Claim 9 (currently amended): The method of claim 15 1 wherein at least a portion of the
2   customer context information identifies a class of service level.

2

1   Claim 10 (currently amended): The method of claim 15 1 wherein at least a portion of

2   the customer context information identifies a quality of service level.

Claim 11 (canceled)

1   Claim 12 (currently amended): The method of claim 15 11 wherein the carrier

2   information includes an address of the second edge device.

1   Claim 13 (currently amended): The method of claim 15 11 wherein the data includes a

2   layer 3 destination address corresponding to a layer 3 address of the second customer

3   device, and

4   wherein the address of the second edge device is derived from a layer 3

5   destination address of the data and at least a part of the customer context information.

1   Claim 14 (currently amended): The method of claim 15 11 wherein the carrier

2   information includes service level information.

1   Claim 15 (currently amended): For use in an edge device of a transport network, a

2   method for processing data, received from a first customer device via access facilities,

3   addressed to a second customer device, the method comprising:

4   a) terminating, with a physical interface, a link of the access facilities;

5   b) associating at least one logical interface with the physical interface;

6   c) associating customer context information with the logical interface;

7   d) upon receiving the data,

8   i) removing at least a part of layer 2 address information from the data to

9   generate resulting data, and

10   ii) adding the customer context information to the resulting data to

11   generate modified data;

12   e) aggregating the modified data at the logical interface with other modified data

13   at other logical interfaces, for trunking on a shared, network-facing,

14   communications link;

3

15   f) receiving the modified data from the shared, network-facing, communications

16   link;

17   g) encapsulating the modified data with carrier information, used to forward the

18   modified data across the transport network to a second edge device with which

19   the second customer device has access, ~~The method of claim 11~~ wherein the data

20   includes a layer 3 destination address corresponding to a layer 3 address of the

21   second customer device;~~, the method further comprising:~~

22   h) at the second edge device, removing the carrier information to obtain the

23   modified data; and

24   i) advancing the data to a logical interface associated with the second customer

25   device, wherein the logical interface associated with the second customer device

26   is determined based on the layer 3 address of the second customer device and at

27   least a part of the customer context information.

1   Claim 16 (original): The method of claim 15 wherein the data is advanced to the logical

2   interface associated with the second customer device by generating an effective address

3   of the logical interface associated with the second customer device, based on at the layer

4   3 address of the second customer device and at least a part of the customer context

5   information.

1   Claim 17 (original): The method of claim 16 further comprising:

2   j) replacing as a destination address, the effective address with a layer 2 address

3   of the second customer device.

1   Claim 18 (original): The method of claim 17 wherein the layer 2 address of the second

2   customer device was previously associated with its corresponding logical interface and

3   stored.

1   Claim 19 (currently amended): The method of claim 15 ~~1~~ wherein the layer 2 address

2   information of the data is part of an Ethernet header, and

4

3   wherein the customer context information replaces a value in a layer 2 source

4   address field of the Ethernet header.

1   Claim 20 (currently amended): The method of claim 15 3 wherein the layer 2 address

2   information of the data is an Ethernet header,

3   wherein the customer context information replaces a value in a layer 2 destination

4   address field of the Ethernet header, and

5   wherein a node terminating the shared, network-facing, communications link

6   operates in the promiscuous mode.

Claims 21-27 (canceled)

1   Claim 28 (currently amended): The method of claim 30 27 wherein the carrier

2   information table associates carrier information with a layer 3 destination address and at

3   least a part of customer context information.

1   Claim 29 (currently amended): For use at an edge device of a transport network, the edge

2   device serving customer devices coupled via access facilities, a method for maintaining

3   carrier information tables, the method comprising:

4   a) terminating, with a physical interface, a link of the access facilities;

5   b) associating at least one logical interface with the physical interface;

6   c) associating customer context information with the logical interface;

7   d) upon receiving data from a customer device, adding the customer context

8   information to generate modified data;

9   e) if the data received from the customer device is an address advertisement, then

10   forwarding the modified data to an edge information update facility; and

11   f) if a table update is received from the edge information update facility, then

12   updating a carrier information table.

13   The method of claim 27 wherein the modified data is forwarded to the edge information

14   update facility via a network other than the transport network.

5

1   Claim 30 (currently amended): <u>For use at an edge device of a transport network, the edge</u>

2   <u>device serving customer devices coupled via access facilities, a method for maintaining</u>

3   <u>carrier information tables, the method comprising:</u>

4   <u>a) terminating, with a physical interface, a link of the access facilities;</u>

5   <u>·b) associating at least one logical interface with the physical interface;</u>

6   <u>c) associating customer context information with the logical interface;</u>

7   <u>d) upon receiving data from a customer device, adding the customer context</u>

8   <u>information to generate modified data;</u>

9   <u>e) if the data received from the customer device is an address advertisement, then</u>

10   <u>forwarding the modified data to an edge information update facility; and</u>

11   <u>f) if a table update is received from the edge information update facility, then</u>

12   <u>updating a carrier information table.</u>

13   ~~The method of claim 27~~ wherein if the data received from the customer device is an

14   address advertisement, first encapsulating the modified data in carrier information before

15   forwarding the modified data to an edge information update facility.

Claims 31-43 (canceled)

1   Claim 44 (currently amended): The method of claim <u>15</u> ~~1~~ wherein the first customer

2   device has a layer 2 address.

1   Claim 45 (currently amended): The method of claim <u>15</u> ~~1~~ wherein the first customer

2   device has a layer 3 address.

1   Claim 46 (currently amended): The method of claim <u>15</u> ~~1~~ wherein the first customer

2   device and the second customer device are provided outside of the edge device of the

3   transport network.

1   Claim 47 (currently amended): The method of claim <u>15</u> ~~1~~ wherein each of the at least one

2   logical interfaces may be associated with only one physical interface, and may not be

3   associated with more than one physical interface.

6

Claim 48 (canceled)

7